<u>REMARKS</u>

Favorable reconsideration of the present patent application is respectfully requested in view of the foregoing amendments and the following remarks.

In this Amendment no claims are added or canceled, and claims 17, 39, 46-47, 55-57 and 62-64 are amended. As a result, claims 1-70 remain pending in the application.

In the Office Action of October 31, 2007 claims 39-47 and 57-70 are rejected under 35 U.S.C. §101. Claims 17-19, 46-47, 55-56 and 62-63 are rejected under 35 U.S.C. §112, second paragraph. Claims 1-5, 7-8, 10-15, 17-18, 20-25, 27-28, 30-34, 36-37, 39-43, 45-46, 48-52, 54-55, 57-62 and 64-69 are rejected under 35 U.S.C. §102(e) in view of U.S. Patent 7,051,189 (<u>Warnes</u>). Claims 6, 9, 16, 26, 29, 35, 38, 44, 47, 53, 56, 63 and 70 are rejected under 35 U.S.C. §103(a) in view <u>Warnes</u>. (Note: Claim 19 was not listed in the Office Action rejection.)

35 U.S.C. §101 Rejection

Independent claims 39, 57 and 64 are amended herein to attend to the §101 rejection. Reconsideration and withdrawal of this rejection is respectfully requested.

35 U.S.C. §112, Second Paragraph Rejection

Claims 17-19, 46-47, 55-56 and 62-63 are presently rejected under §112, second paragraph as allegedly being indefinite. The §112 rejections of these claims have been addressed as follows.

Claim 17 is amended herein to attend to a typographical error in the claim dependency. Claims 46-47 have been addressed by replacing "method" with "computer readable medium" as

recited in their parent claims.   Claims 55-56 have been addressed by replacing "method" with "optimized computing assembly" as recited in their parent claims. Claims 62-63 have been addressed by replacing "method" with "optimized code generator as recited in their parent claims.

Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. §112, second paragraph of claims 17-19, 46-47, 55-56 and 62-63 is respectfully requested.

<p align="center">35 U.S.C. §102 & §103 Rejections</p>

The §102 and §103 rejections of claims 1-70 are respectfully traversed for at least the following reasons.

The present Gateway invention involves methods and systems for optimizing the representation of a code sequence. This is done in various embodiments by tuning the instruction set based on the <u>frequency of operations performed</u>. The Office Action cites the <u>Warnes</u> patent which involves processor code optimization using code compression. However, the <u>Warnes</u> patent explains that its system operates in a different manner than the present invention. The <u>Warnes</u> system uses the frequency of occurrence—or static frequency of each instruction type— rather than the frequency of operations performed. The <u>Warnes</u> document explains the difference between static frequency and dynamic frequency, but then goes on to specify that the <u>Warnes</u> system uses the frequency of occurrence rather than the frequency that the operations are performed. This is discussed in the cited passage of <u>Warnes</u> relied upon in the rejection:

> Next, in step 104, the static frequency of each instruction type from the base instruction set is determined. As used herein the term "static" refers to a simple count of each instruction type as it exists in the program. The static count is in contrast to the dynamic number of instructions, which refers to the number of

times each instruction is executed during a typical execution of the program, which is typically (but not necessarily) different. Furthermore, the term "base instruction set" refers to the core set of instructions of the core processor less any optional or user configured instructions. The static and dynamic counts may be accomplished in any number of different ways readily apparent to those of ordinary skill. Appendix II provides one exemplary script for analyzing a processor (e.g., ARCTM) assembler file and printing the frequency of usage statistics for various processor instruction formats.

Next, in step 106, the instruction types are sorted by frequency of occurrence as determined in step 104.[1]

In the event the Office interprets Warnes to imply that the frequency that operations are performed is used in tuning the instruction set (rather than the static frequency), it is respectfully requested that those portions of Warnes being relied upon for this interpretation be indicated in the next Official Paper.

For the reasons discussed above, it is respectfully submitted that Warnes does not teach or suggest "wherein the tuning of the instruction set is based on the frequency of operations performed," as recited in claims 1 and 21 (or the similar features of claims 39, 48 and 64); or "selecting one of the plurality of predetermined instruction sets based on the determined frequency of operations performed," recited in claim 11; or "wherein the tuning of the instruction set is based on the frequency of use of the plurality of registers," as recited in claim 30; or "an optimized instruction set based on the determined frequency of operations," as recited in claim 57.

Regarding dependent claims 5, 15, 25, 34, 43 and 52, the Warnes patent contains no suggestion of "wherein the step of determining operation frequency may further include loop analysis." The Warnes document merely explains the difference between static frequency and dynamic frequency, and states that they may be accomplished in any number of different ways.

Accordingly, it is respectfully submitted that the Warnes document does not disclose or

suggest the features of the claimed invention. Therefore, withdrawal of the rejections is earnestly

requested.

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[1] Warnes, col. 9, lines 3-21.

Deposit Account Authorization / Provisional Time Extension Petition

It is believed that no additional fees or extension of time is needed for this filing.

However, to the extent necessary, a provisional petition for an extension of time under 37 C.F.R.

§1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of

this, concurrent and future replies, including extension of time fees, to Deposit Account 50-0439

and please credit any excess fees to such deposit account.

CONCLUSION

In view of the foregoing, it is respectfully submitted that the application is in condition

for allowance. However, in the event there are any unresolved issues, the Examiner is kindly

invited to contact applicant's representative, Scott Richardson, by telephone at (571)970-6835 so

that such issues may be resolved as expeditiously as possible.

Respectfully submitted,

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